

Welcome to Alice Programming An Introduction



Alice.org

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Download material at <http://caliss.wikispaces.com>



An Educational Software that teaches students
computer programming in a 3D environment

FREE!!

- About Alice
- Downloads
- Teaching
- Community
- Publications
- Support



A revolution in computer science pedagogy

alice.org

Alice News



Attend a summer workshop! For interested high school and college instructors.

[Read more...](#)

All about Alice

Alice is an innovative 3D programming environment that makes it easy to create an animation for telling a story, playing an interactive game, or a video to share on the web. Alice is a teaching tool for introductory computing. It uses 3D graphics and a drag-and-drop interface to facilitate a more engaging, less frustrating first programming experience.

[Read more...](#)

Teaching Materials

The Alice team has developed instructional materials to support students and teachers in using this new approach. Resources include textbooks, lessons, sample syllabuses, test banks, and more. Other authors have generously joined our efforts, creating additional textbooks.

New! - [Subscribe](#) to the Alice Educator Mailing List!

[Read more...](#)

Downloads

[Alice 2.2](#), [Alice 2.0](#)
Designed for High School and College

[Storytelling Alice](#)
Designed for Middle School

[Alice 3 beta](#)
Get a sneak peek at the future of Alice

[3D Models Gallery](#)
Additional free 3D models

Alice Blog

Check out the Alice blog! The Alice team discusses the latest in Alice development. View screencasts demonstrating new features, tips and techniques!

[Visit blog...](#)

Community Forums

Share and gather knowledge about Alice through our community forums. Students, teachers and enthusiasts are all welcome! If you have a question or comment about Alice, post it here!

[View forums...](#)

Alice in the Classroom

Incorporates the **Technology Standards**, from creativity and innovation to critical thinking and problem solving.

Easy to use programming for students to **demonstrate their knowledge** in any content or subject matter.

Engaging and interactive for learning and teaching.

~ Examples of Student's work . . .

Teaching: visit online lessons – try them and modify them to fit your classroom needs, provide handouts, teach short lessons with time to play, assign a project

~ What you will create today . . .

Making a World

~ What you will learn

- ☐ Templates /tutorials / examples
- ☐ Interface
- ☐ Adding objects (3D text, billboard, s/he builder)
- ☐ Saving your project
- ☐ Saving scenes and/or camera views
- ☐ Positioning tools and quad view
- ☐ Properties: (color, opacity, record, sounds)
- ☐ Method editor: (create / edit)
- ☐ Events: (arrow controls and mouse click)
- ☐ Where to learn more about Alice

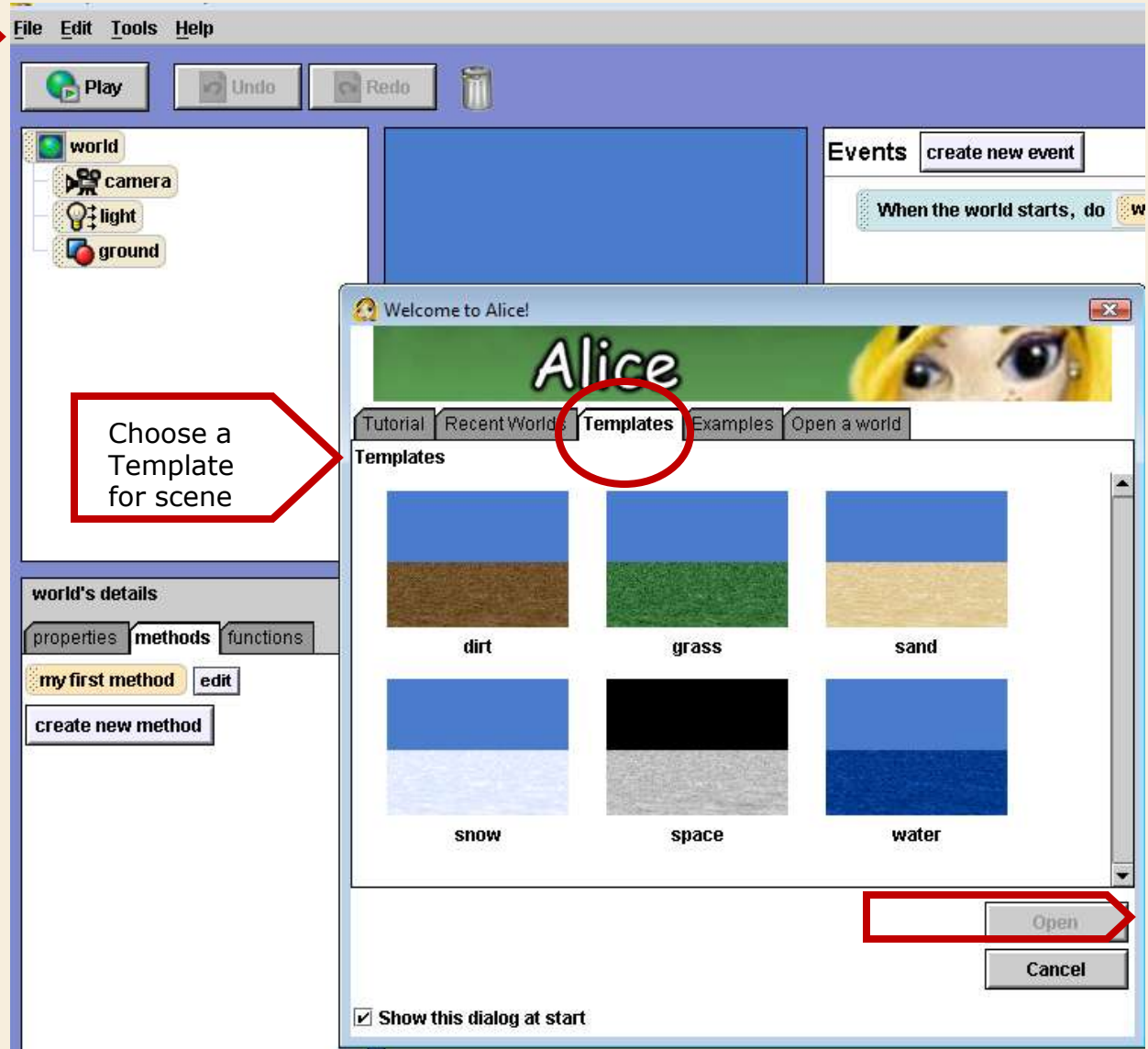
Interface 1 - Start Alice

☐ File

☐ Open
new world

☐ Choose a
template
(sand)

☐ Click open



Interface 2 ~ Main Screen

The screenshot shows the Alice 2.0 main screen. A red rectangle highlights the **Tool Bar** at the top, which includes buttons for Play, Undo, Redo, and a trash icon. On the left is the **Object Tree**, listing 'world', 'camera', 'light', and 'ground'. In the center is the **World Preview** window, which shows a 3D scene and a green 'ADD OBJECTS' button circled in red. To the right is the **Events Editor**, showing a sequence of events starting with 'When the world starts, do world.my first method'. Below the preview is the **Methods Editor**, showing details for 'world.my first method' with options for 'No parameters', 'No variables', and 'Do Nothing'. A callout box points to the 'ADD OBJECTS' button with the text: 'Click "add objects"'. Another callout box points to the 'world's details' section, which includes 'properties', 'methods', and 'functions' tabs, and a 'my first method' button with an 'edit' button next to it. A third callout box points to the 'Events Editor' with the text: 'Let arrows move When mouse click'. A fourth callout box points to the 'Methods Editor' with the text: 'Details: Properties, methods and functions of an object.'.

Object Tree:
List of objects in the world

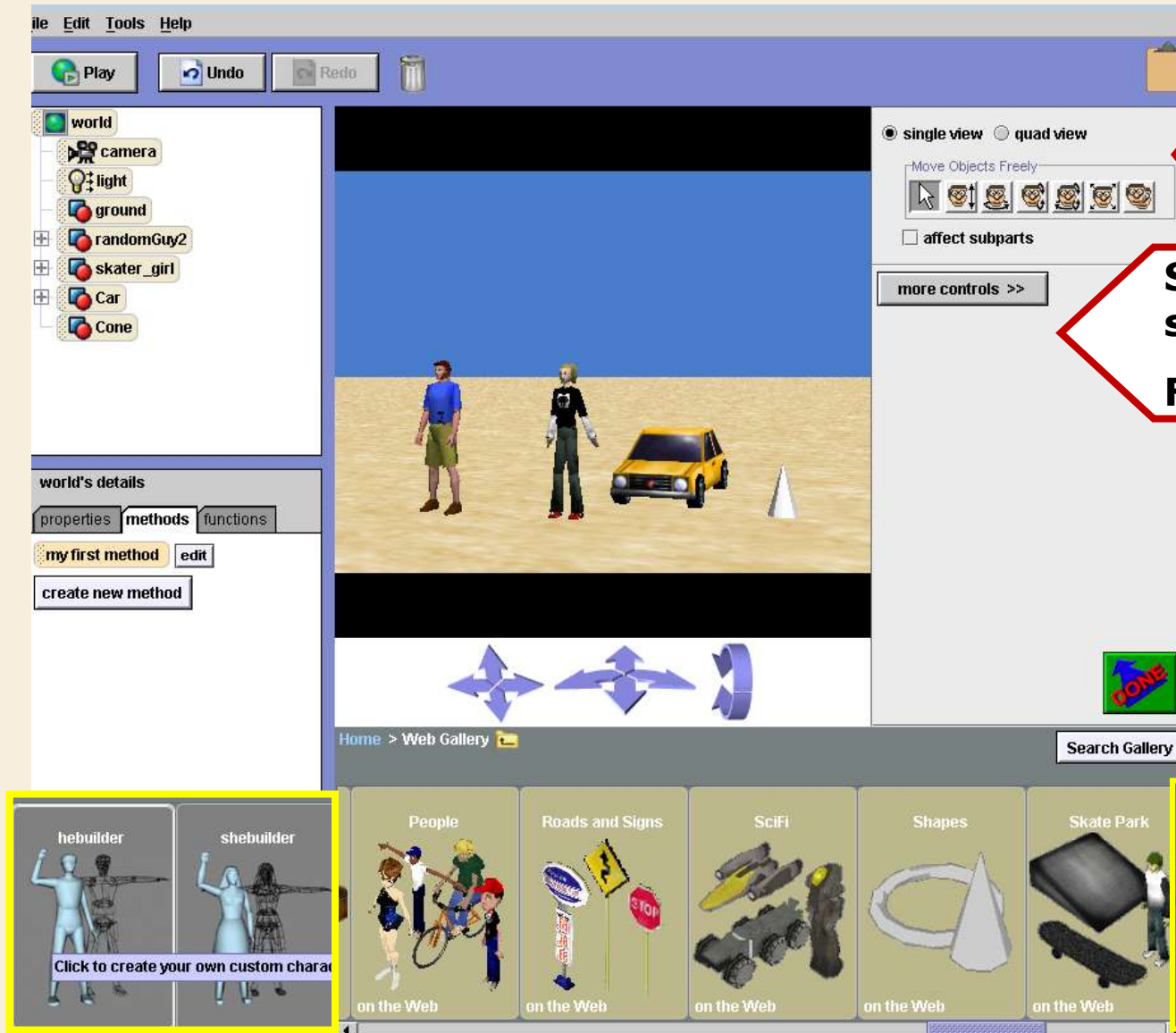
Events Editor
Let arrows move
When mouse click

Methods Editor

Details:
Properties, methods and functions of an object.

Click "add objects"

Interface 3 - objects / views



Positioning tools

Snapshot of scenes / views
For camera

Back to Editing Methods

Interface 3 - objects / views

Add objects:

WEB GALLERY

Skater Girl

Random man

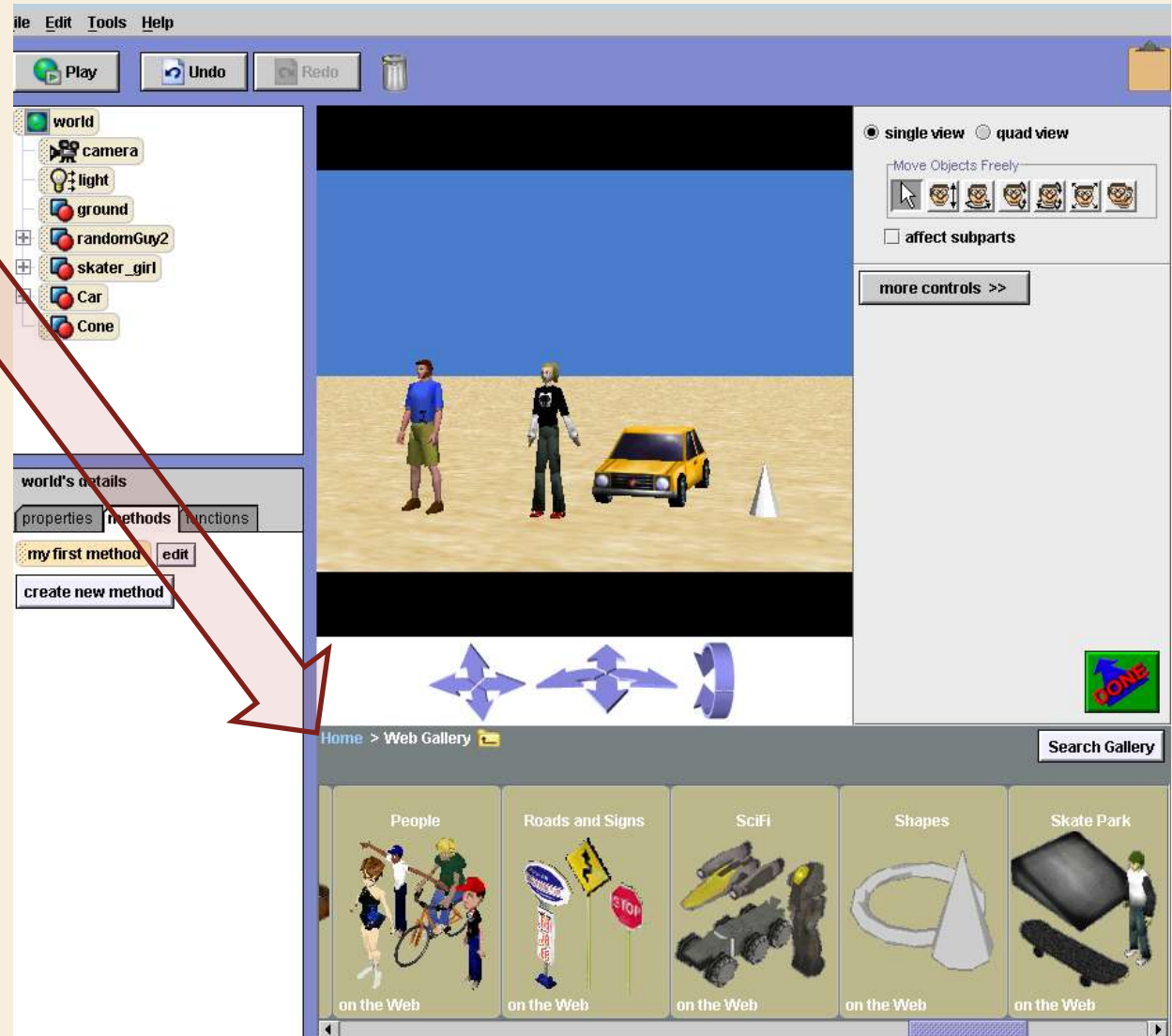
Car (vehicles)

Cone (shapes)

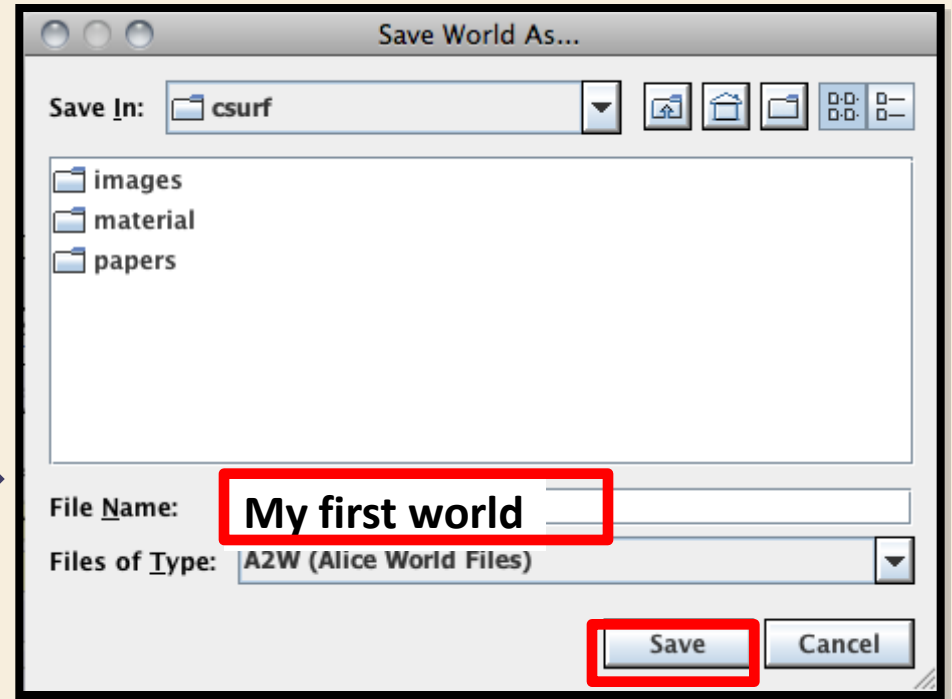
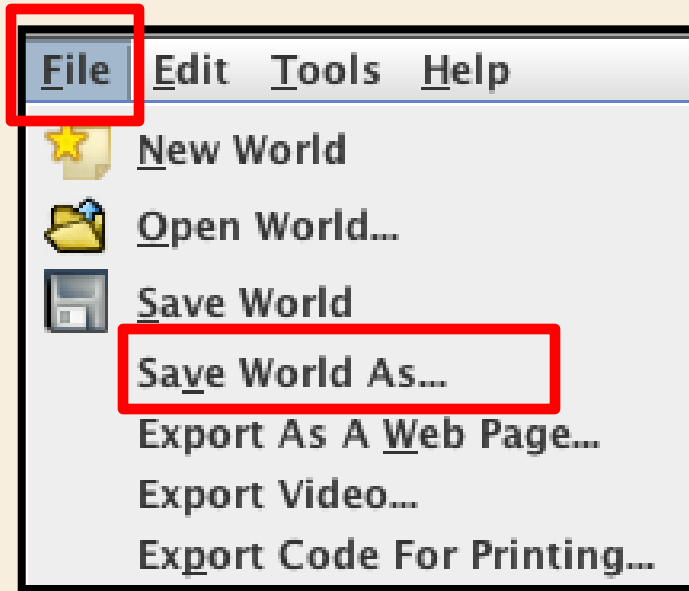
Before your move
objects around

* * SAVE World as

* * Save Scene



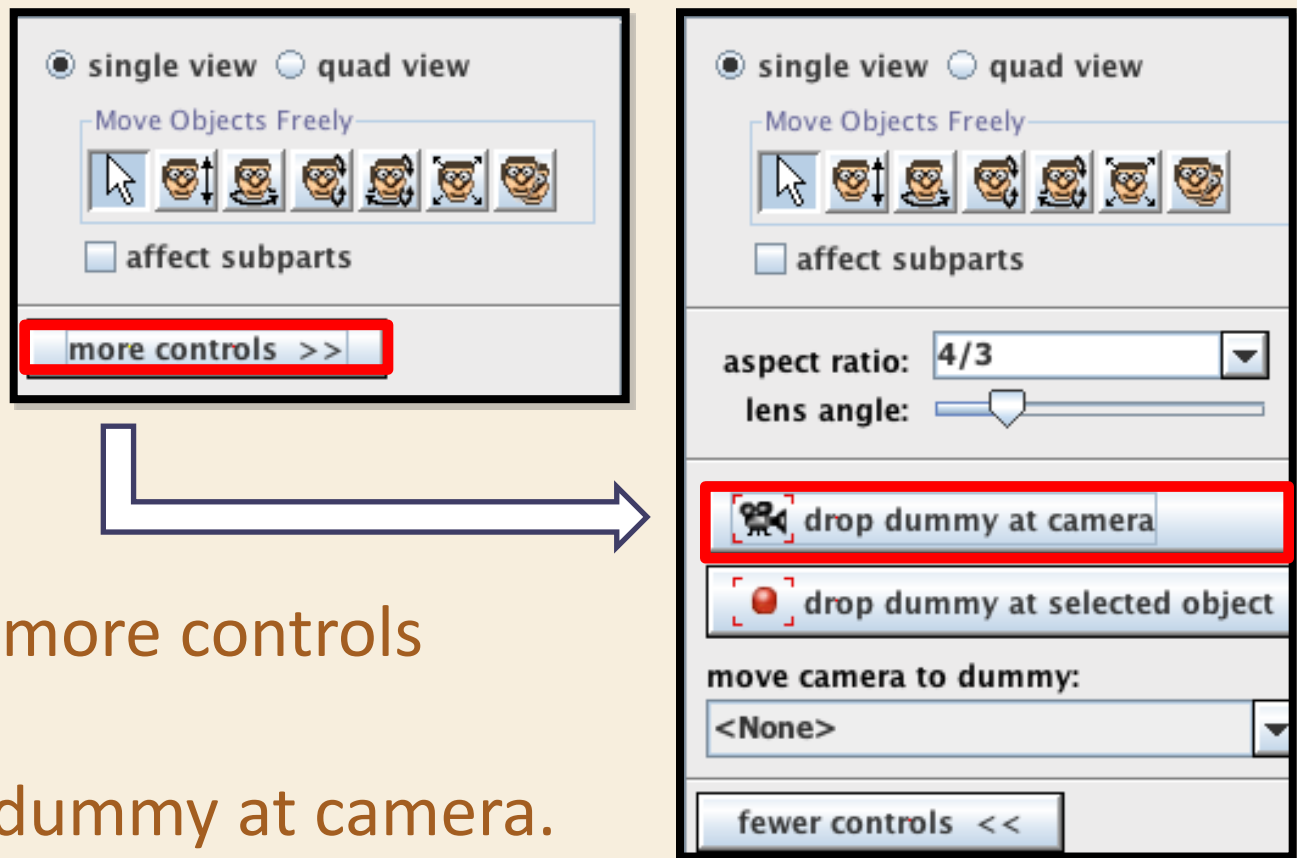
Save your world



**Save your world often.
Alice will remind you to save your world
every 15 minutes.**

Saving a view (dummy objects)

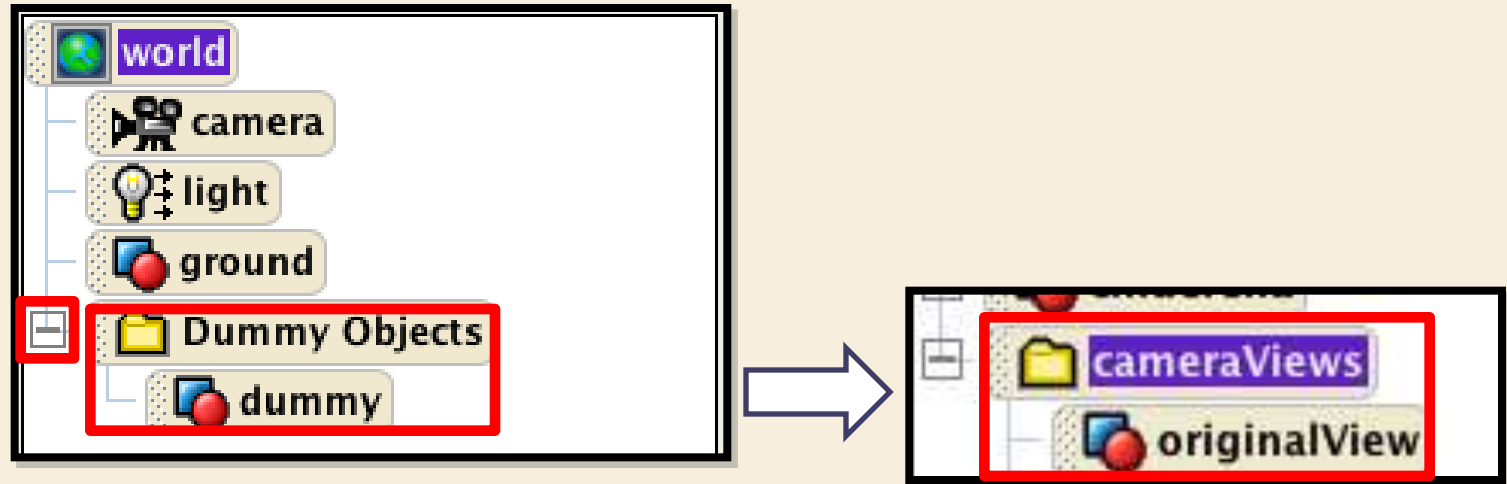
Before you move any objects, ground, etc.
save the Original Scene....



Click on the **more controls**

Select **drop dummy at camera**.

Renaming objects



A new Folder appears called **Dummy Objects**.
Right click it and **rename it cameraViews**.


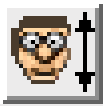





Open the folder by clicking on the **+** next to it.
Right click on the dummy object inside and **rename it originalView**.

Positioning Tools

1. Click on the tool that you want
2. Click & hold on the object you want to position.
3. Move the mouse to position the object.

Fix mistakes with



Image	Name	Function
	Pointer Tool	Moves the object in any direction along the ground.
	Vertical Tool	Moves the object up or down.
	Turn Tool	Move left or right about its center point.
	Rotate Tool	Rotates the object forward or backward about its center.
	Tumble Tool	Rotates the object in any direction, keeping the center point fixed.
	Resize Tool	Changes the size of the object, keeping the center point fixed.
	Duplicate Tool	Creates an exact copy of the object.

Set up your scene



1. Move girl



2. Turn girl



3. Move guy



4. Turn guy



5. Move car



6. Enlarge the car



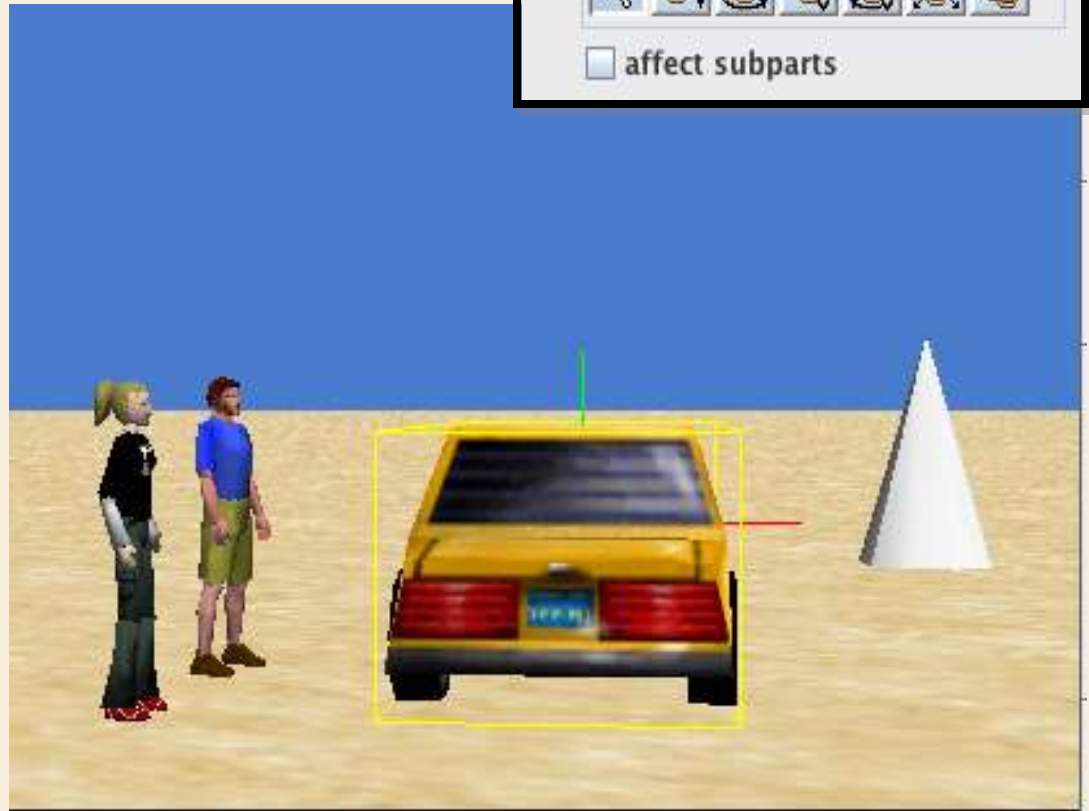
7. Move car up



8. Enlarge cone



9. Move cone back



10. File / SAVE

11. Click Done

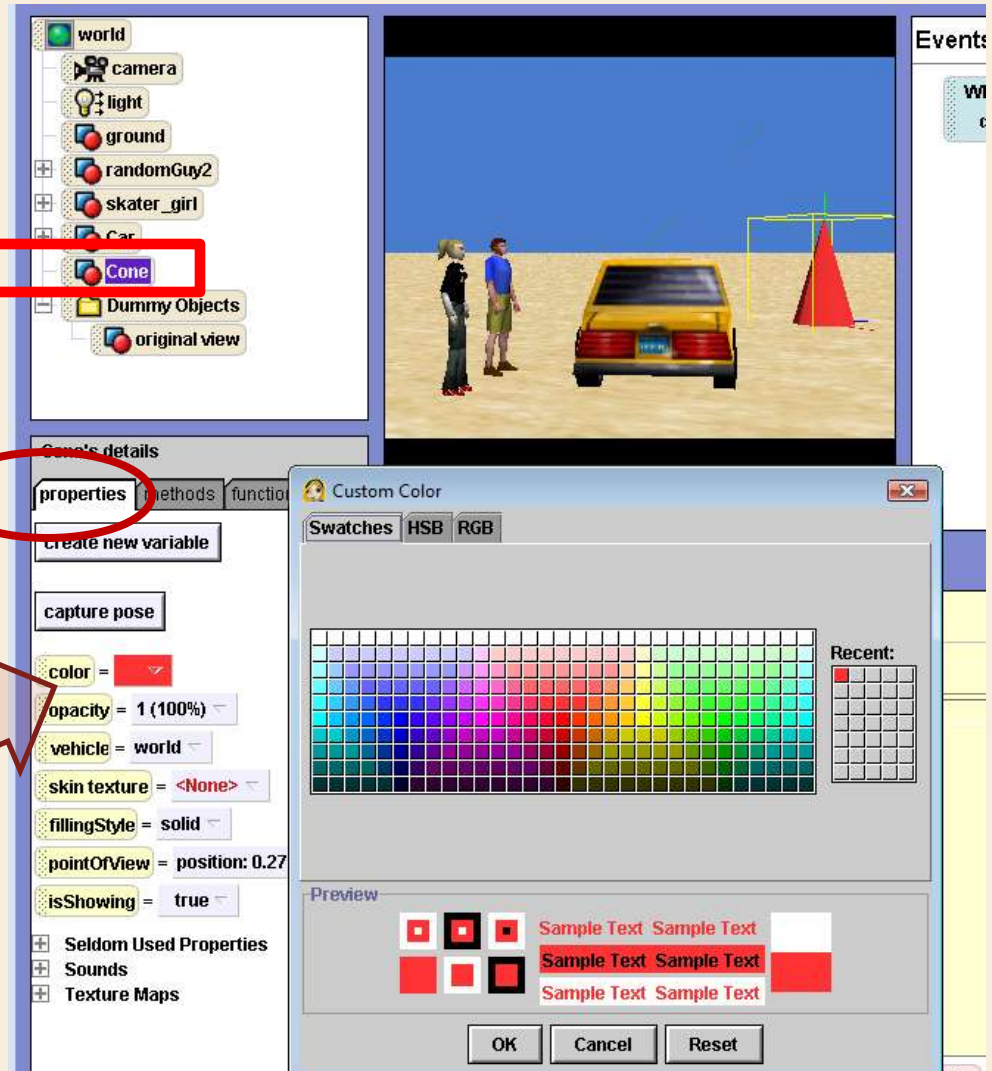


Properties

Every object has properties

You can change properties in the beginning of the world or drag them in the editing page when you want them to change.

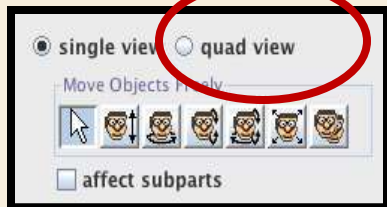
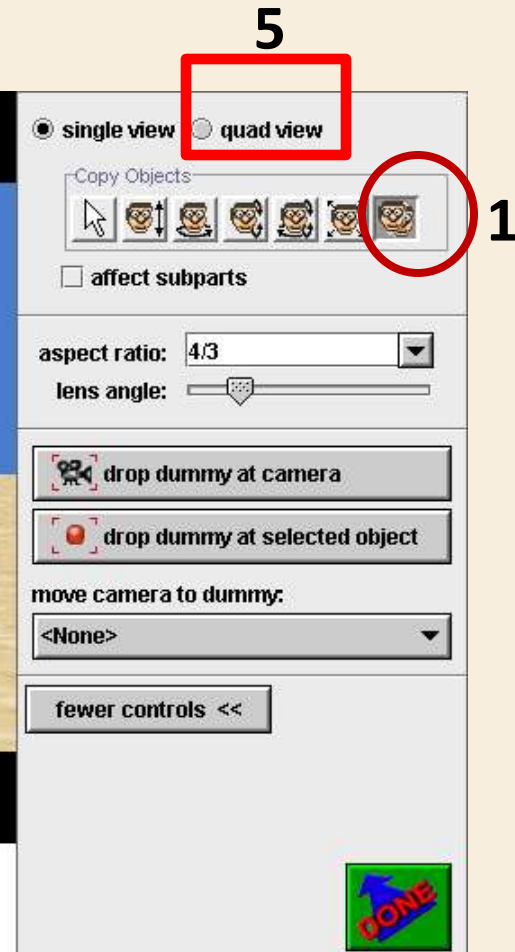
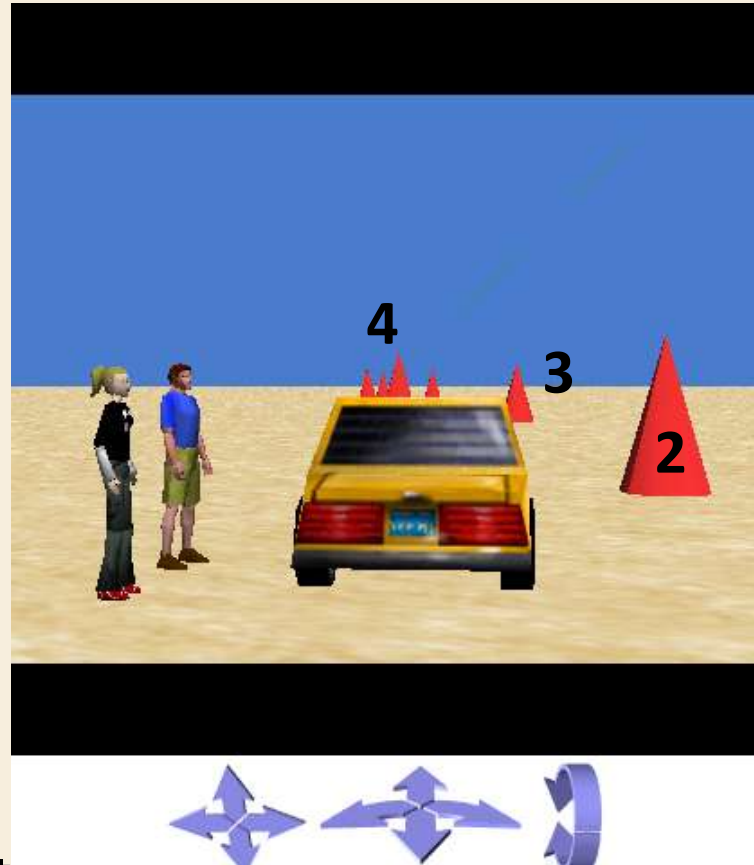
1. Click on the Cone.
2. Click Properties
3. Change the color of the cone.



Copy the cone

Click on add objects

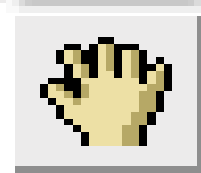
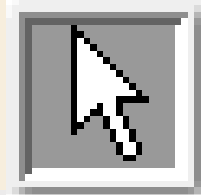
1. Click on the copy tool
2. Click on the cone and drag the mouse
3. Click on the 2nd cone and drag
4. Repeat until you have 6 cones.
5. Click on Quad View to help set up



Quad View

Position your objects in different views

1. Use the move and zoom tools to help move your objects
2. If you move the ground click UNDO
3. Go back to single view to check
4. Click DONE when ready



Move

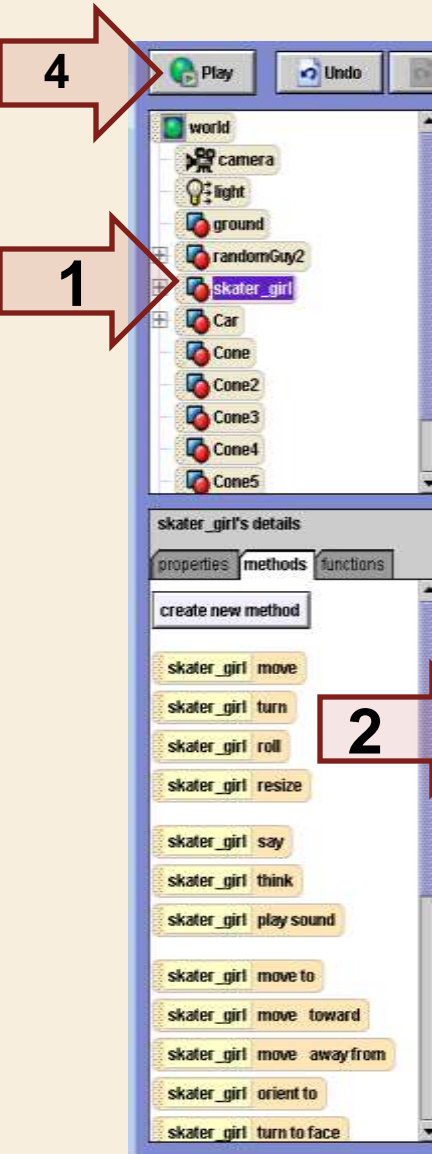


Zoom



Progress Check

Add animation codes



1. Click on the object in the object tree
2. Click on Methods
and Drag in the codes under
“do nothing”

This screenshot shows the 'world.my first method' editor. The title bar says 'world.my first method'. Below it, the text 'world.my first method No parameters' is displayed, with a 'create new parameter' button. Below that, 'No variables' is displayed, with a 'create new variable' button. The main area contains a list of animation codes, each with a dropdown menu to select the object and a 'more...' button to expand the code. A red arrow labeled '3' points to the 'more...' button of the 'randomGuy2 say Don't worry you'll do fine. duration = 3 seconds' code. The codes are:

- skater_girl turn left 0.25 revolutions more...
- skater_girl say I'm so nervous aabout my driving test. more...
- randomGuy2 turn right 0.25 revolutions more...
- randomGuy2 say Don't worry you'll do fine. duration = 3 seconds more...
- skater_girl say Thanks more...
- randomGuy2 say Good Luck! more...
- skater_girl move amount = 2 meters toward target = Car.RightFrontWheel more...
- skater_girl move right 0.5 meters more...

At the bottom, there are buttons for 'Do in order', 'Do together', 'If/Else', 'Loop', 'While', 'For all in order', 'For all together', 'Wait', 'print', and a 'Run' button.

3. Use **drop down menu** to add details to your method (duration, text size, other)
4. **Play** world to Test animation

skater_girl ▾	turn	left ▾	0.25 revolutions ▾	more... ▾
skater_girl ▾	say	I'm so nervous aobut my driving test. ▾	more... ▾	
randomGuy2 ▾	turn	right ▾	0.25 revolutions ▾	more... ▾
randomGuy2 ▾	say	Don't worry you'll do fine. ▾	duration = 3 seconds ▾	more... ▾
skater_girl ▾	say	Thanks ▾	more... ▾	
randomGuy2 ▾	say	Good Luck! ▾	more... ▾	
skater_girl ▾	move	amount = 2 meters ▾	toward	target = Car.RightFrontWheel ▾ more... ▾
skater_girl ▾	move	right ▾	0.5 meters ▾	more... ▾

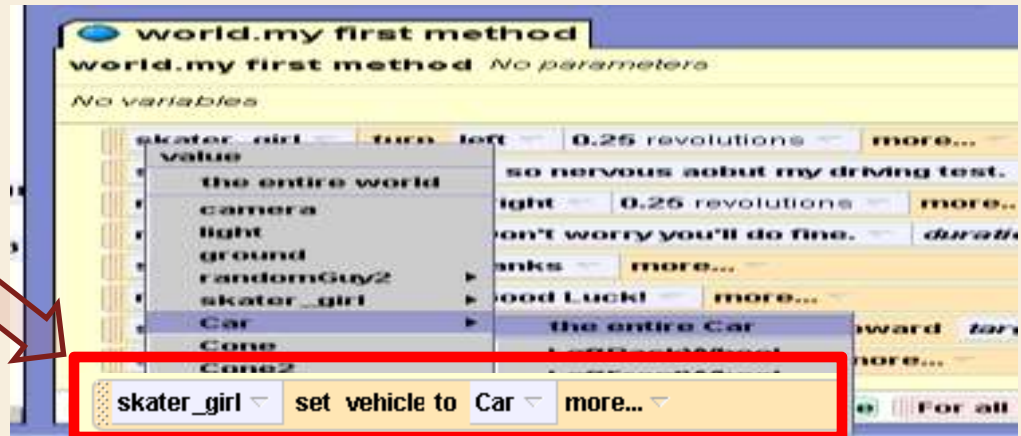
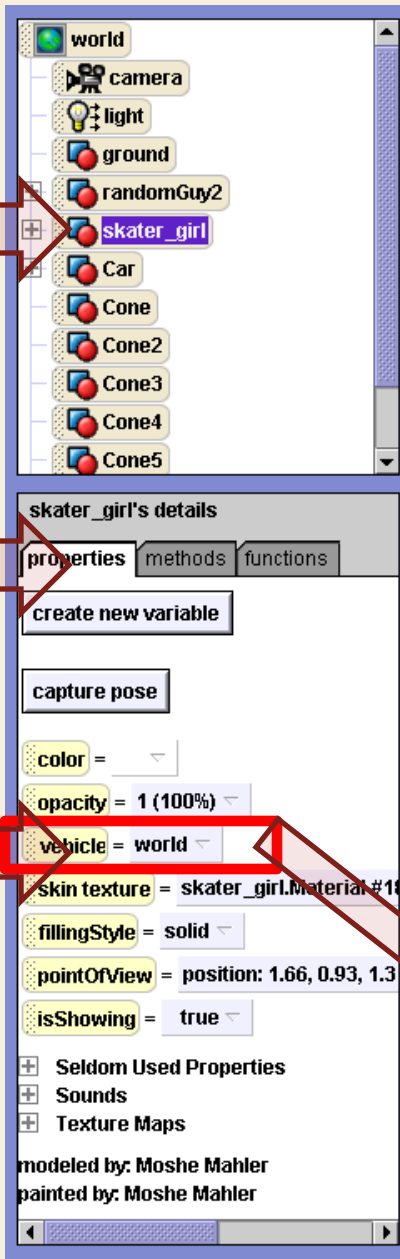


Property ~ vehicle

The vehicle property allows one object to move with another object. We want the girl to move with the car.

1. Select the **skater girl**
2. Click on **Properties**
3. Drag the vehicle property into the editing box
4. Drop down menu select **car | 'the entire car'**

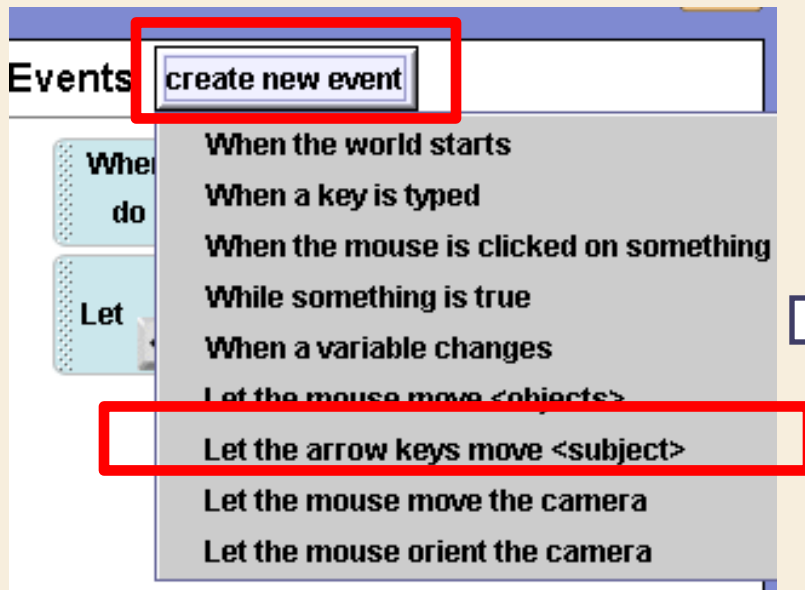
Now when the car moves the girl will move with it



Events

Events let the user or world do something while playing.
We want the user to move the car with the arrow keys.

1. **Create New Event** (top right)
2. Choose ***“Let the arrow keys move <subject>”***
3. **Select “Car”**
4. **Play** the world to test
5. **Save** your world

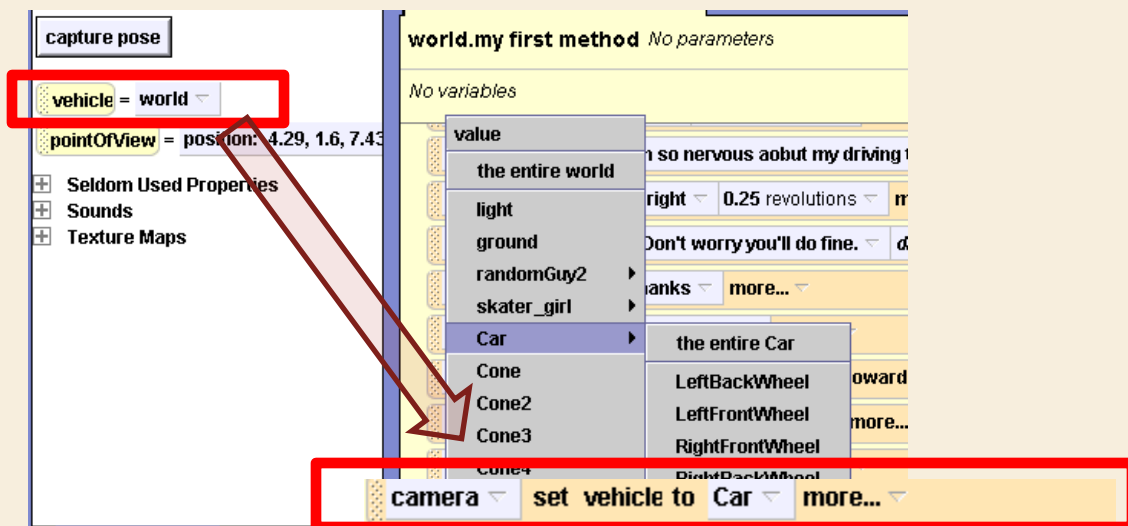
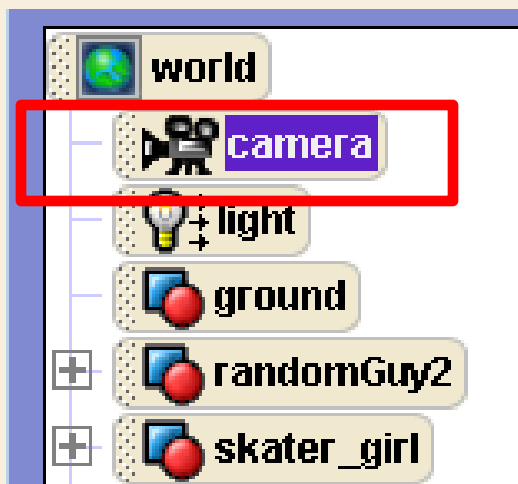


Camera

We want the camera to follow the car.

So we need to drag the camera's vehicle into the editing area.

1. Select the **Camera** in the Object Tree
2. Click on **Properties**
3. Drag the **vehicle** property in the editing box
4. Drop down menu select **car** | 'the entire car'
5. **Play** your world to test drive

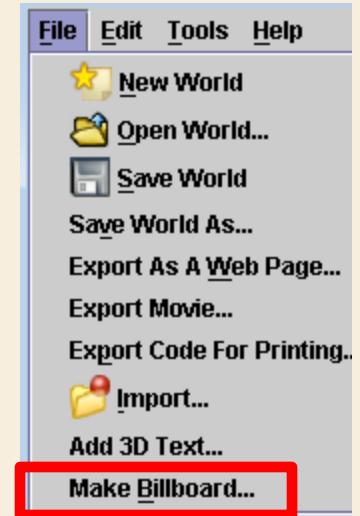


Instructions

The user may need instructions to start to drive.

You can create text in Paint or Powerpoint and save it as a .jpg file.

Then add it to the scene by clicking on File | make billboard.
Then hide the instructions by changing the opacity.



For now we will have the car give instructions

1. Click on the **car** (object tree)
2. Click “Methods”
3. Drag “**car say**” into the editors box
4. Add text: **Press the arrow keys to drive**
5. Duration: 3 seconds
6. Font size: = 35



Car ▾ say Press the arrow keys to Drive. ▾ duration = 3 seconds ▾ fontSize = 35 ▾ more... ▾

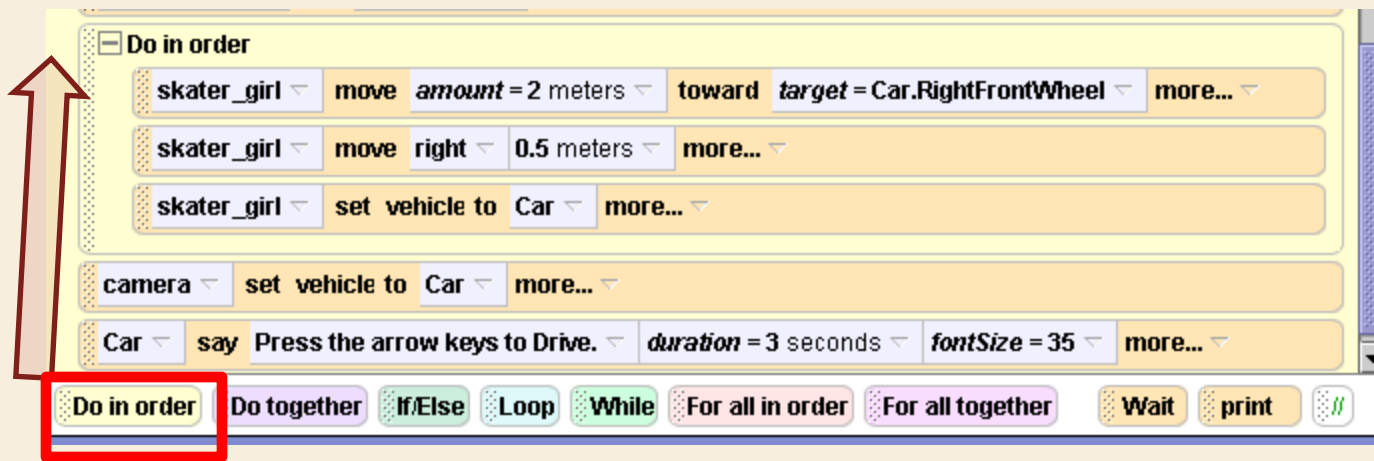
Progress Check

Methods and Events

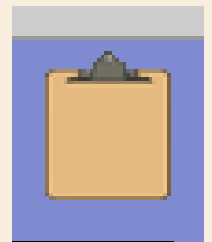
Create another event to move the girl into the car when you click on her.

First we will create a new method

1. Drag up a “Do in order” command (bottom of page)
2. Drag in the methods that move the girl into the car.



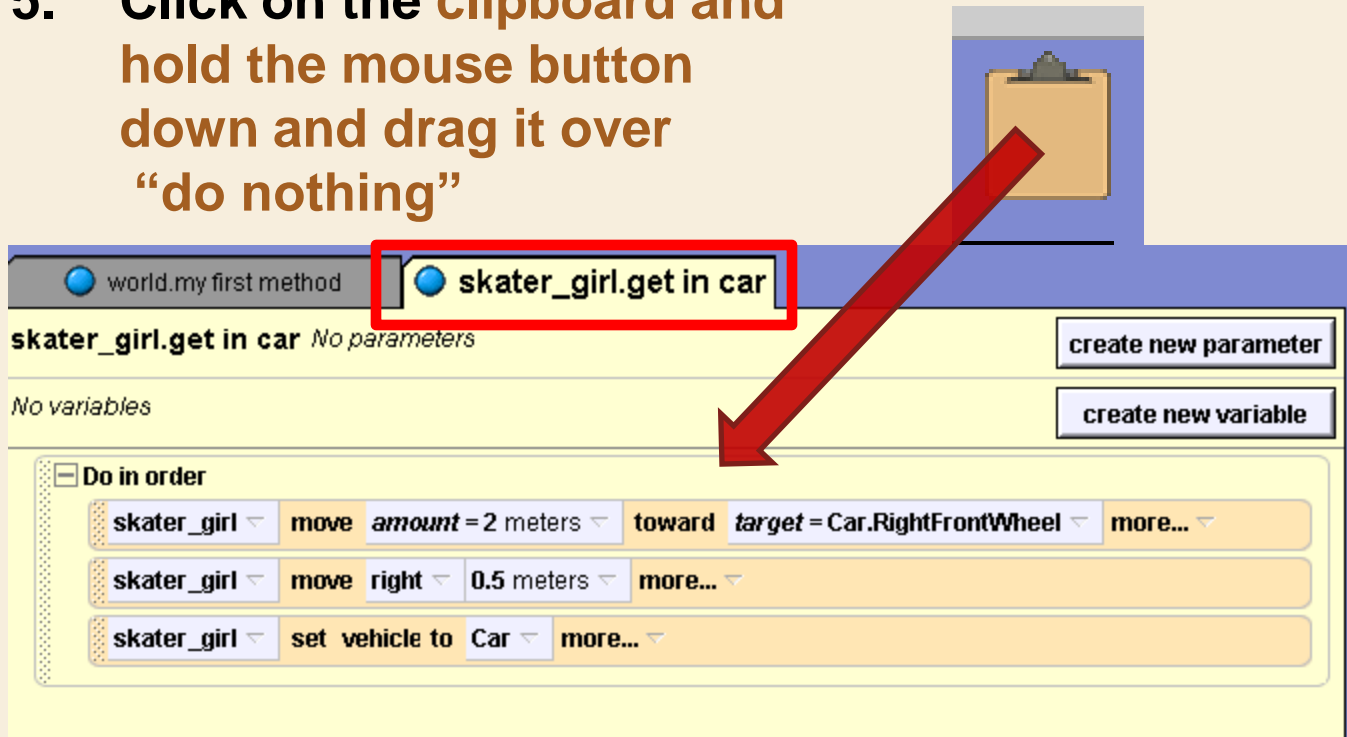
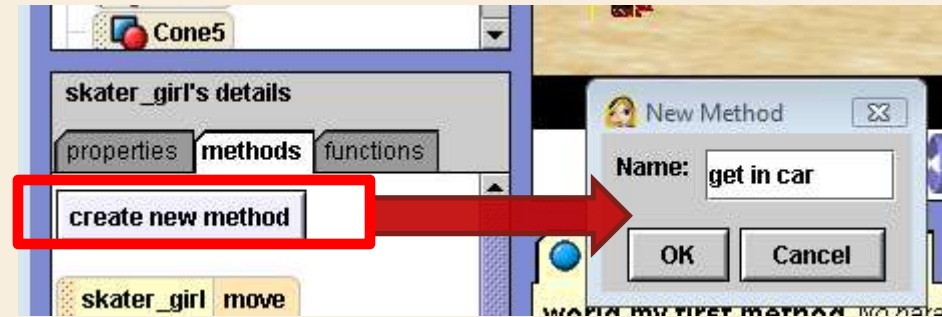
3. Drag the entire “Do in Oder” method into the clipboard to copy and paste into a separate method



Top right

Create new Method

1. Click on the object
(skater girl)
2. Click on **Methods**
3. Click on **Create new method**
4. Name it “get in car”
5. Click on the clipboard and
hold the mouse button
down and drag it over
“do nothing”

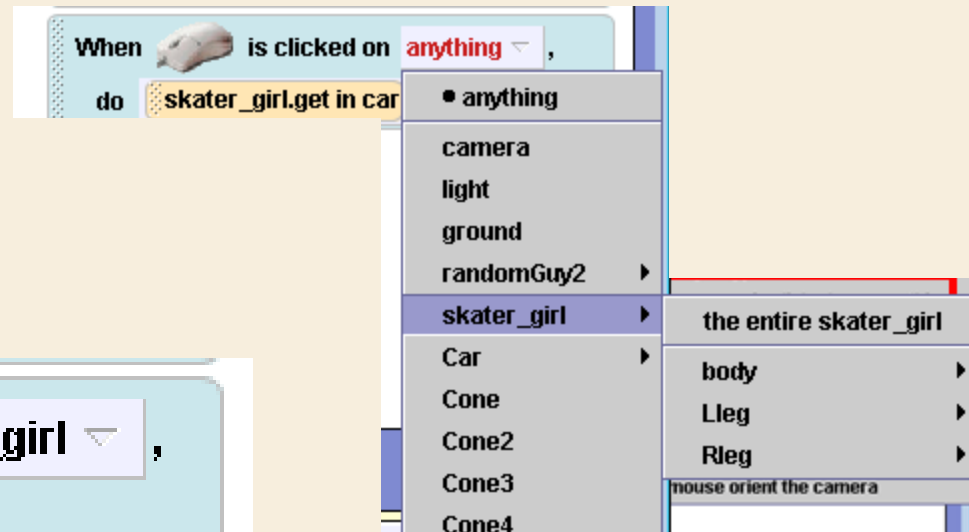
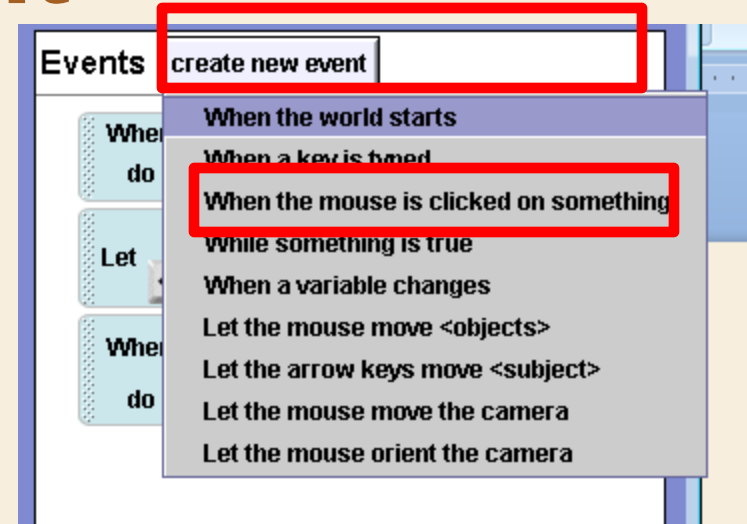


New method to use for an event.

Create new Event

We want the user to click on the girl when she is ready to drive.

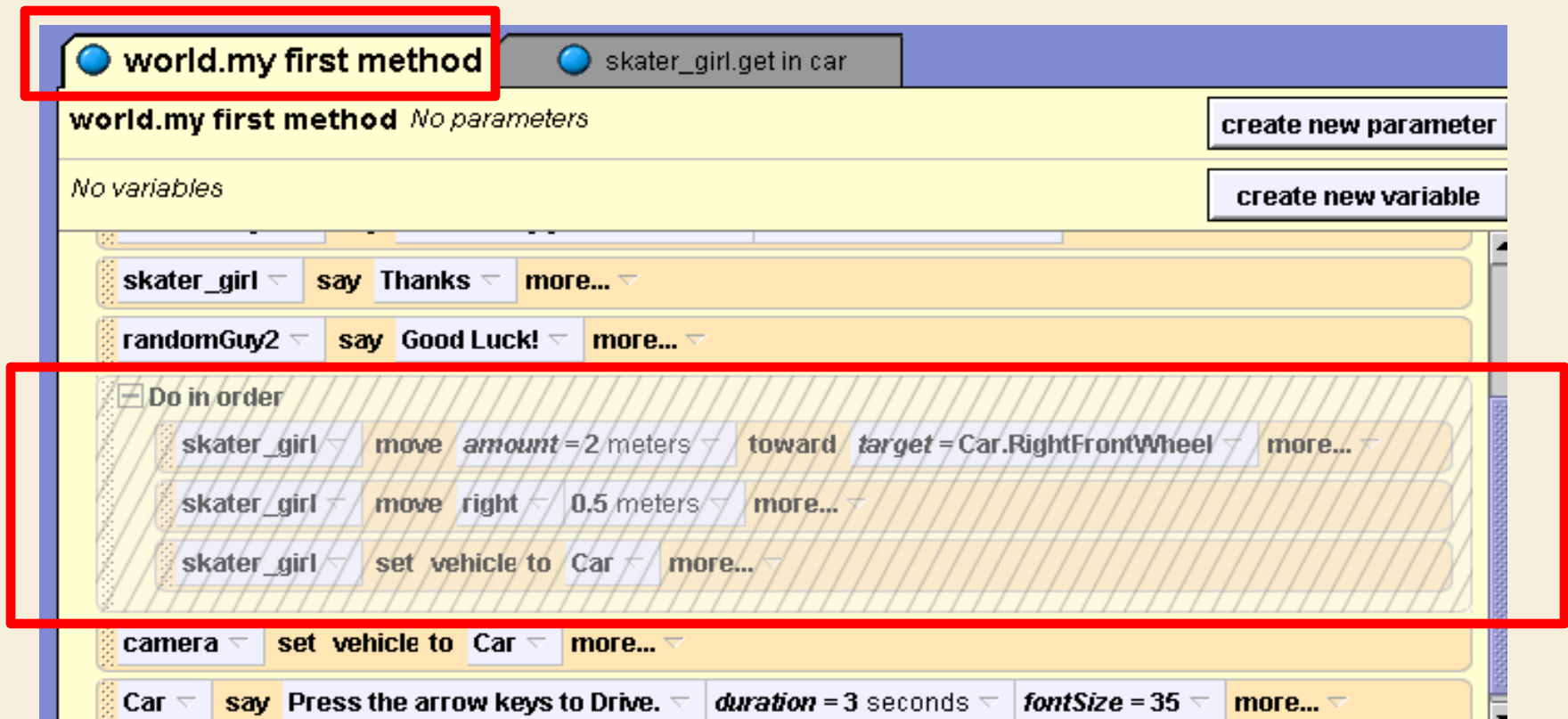
1. Click **“Create new event”**
2. Select **“When the mouse is clicked on something**
3. Click on the **“anything arrow”** and select
**“skater girl,
entire skater girl**
4. Drag the new method named **“get in car”** in the **“do”** box



Disable code

We do not need the original code on “World.my first method

1. Click on “World.my first method
2. Right click on the “Do in order”
3. Select **disable** (this will grey it out)



Add Instructions

Add instructions to click on the girl to move her into the car.

We can have the cone tell the user to click on the girl...

1. Click on the **cone**
2. Click “**Methods**”
3. Drag “**cone say**” into the editors box
4. Type: Click on the girl to move her into the car.

—

Cone ▾	say	Click on the girl to move her in the car. ▾	duration = 3 seconds ▾	fontSize = 35 ▾	more... ▾
--------	-----	---	------------------------	-----------------	-----------

6. **Play** your world

Progress Check

Ending ~ new method

We may want the world to Say Good job when the car passes the last cone.

We will create another method and event to have **cone 6** say **Good job** when the car is 3 meters from cone 6.

1. Click on the World in the object tree
2. Click on methods
3. Click on “create new method
4. Name it “Good Job”



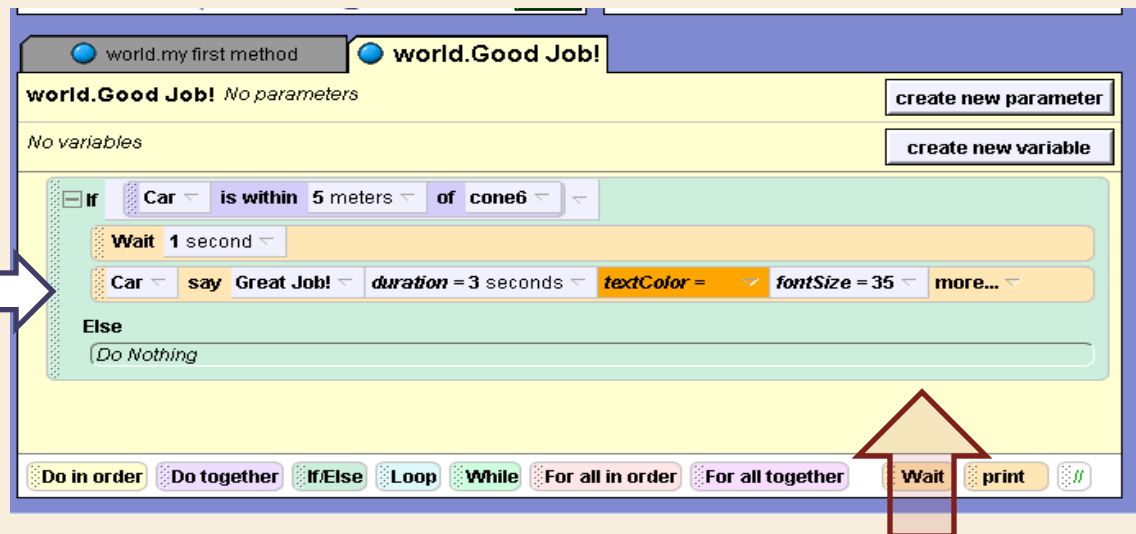
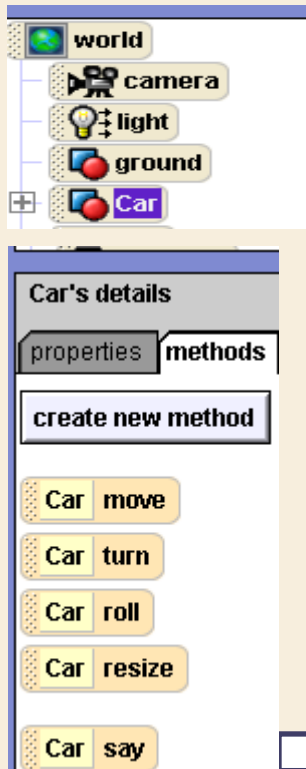
If / Else Method

1. Click on the car from the object tree
2. Click on the **Functions** for details
3. Drag in **"If/Else"** command from the bottom into the new method (select true)
4. Drag in (over true) Car within threshold of object and Select 5 meters of cone 6

The image shows a Scratch-like interface with two main panels. The left panel, titled 'Car's details', has tabs for 'properties', 'methods', and 'functions'. The 'functions' tab is active, showing a 'create new function' button and a list of proximity-related functions: 'Car is within threshold of object', 'Car is at least threshold away from', and 'Car distance to'. The right panel shows a method editor for 'world.Good Job!'. It has buttons for 'create new parameter' and 'create new variable'. The method body contains an 'If' block with the condition 'Car is within 5 meters of cone6'. Inside the 'If' block, there is a 'Wait 1 second' block and a 'Car say Great Job! duration = 3 seconds textColor = fontSize = 35 more...' block. An 'Else' block with '(Do Nothing)' is also present. At the bottom, a palette of control blocks includes 'Do in order', 'Do together', 'If/Else', 'Loop', 'While', 'For all in order', 'For all together', 'Wait', 'print', and a green flag icon. A white arrow points from the 'Car is within threshold of object' function in the left panel to the 'If' block in the right panel. A red arrow points from the 'If/Else' block in the bottom palette to the 'If' block in the right panel.

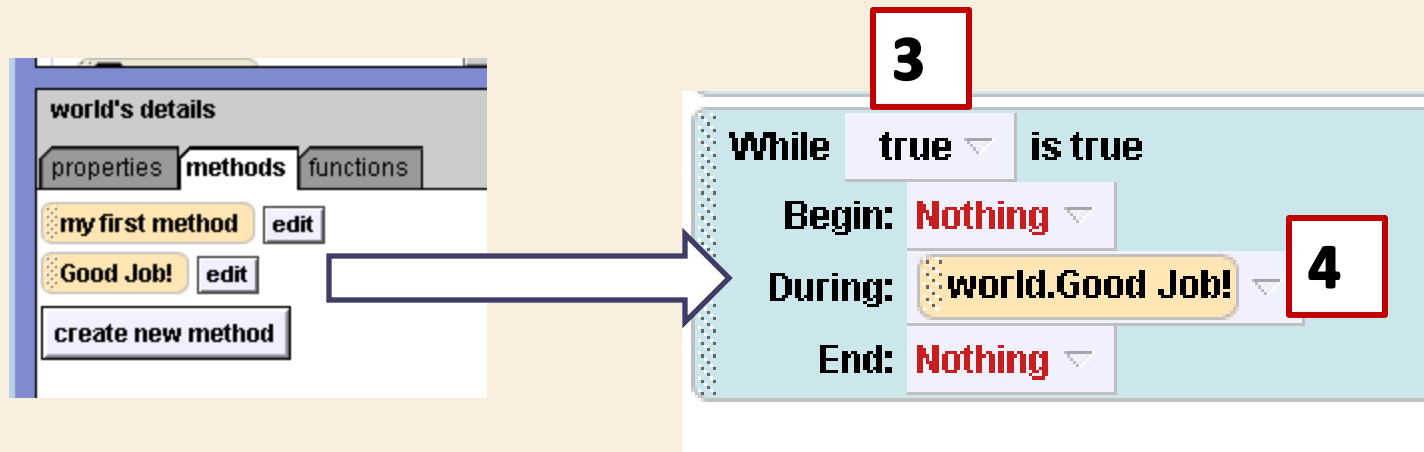
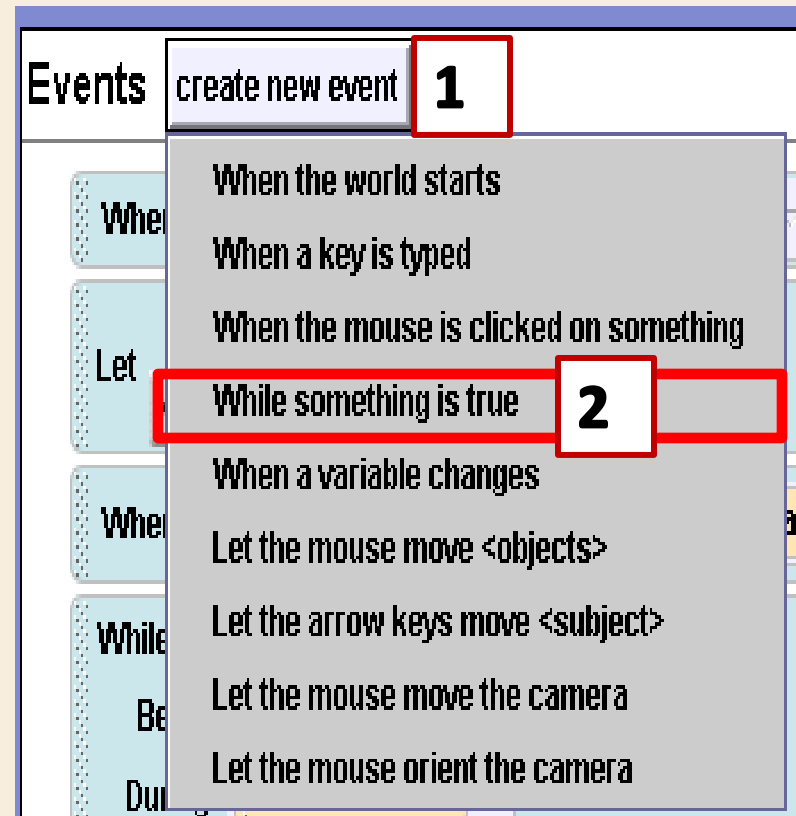
If / Else Method continued

1. Add a **Wait 1 second** command from the bottom
2. Drag in **car say** “Great Job
3. Change **color** of text and **size**



New Event

1. Click **Create new event**
2. Select **While something is true**
3. Select **True**
4. Drag in the new method **Good Job** in “during”



Congratulations

Enrichment

1. **Add 3D text: “Student Driver” on top of the car so that it stays on the car while it moves.**
2. **Add a scene (see instructions)
(ex. Add a building for the DMV for scene 1)**
3. **Add a timer (see instructions)**
4. **Add music or sound**
5. **Export as a video**

References

<http://www.Alice.org>

<http://www.ed2go.com/erating/>

Online line Class: Mike Orsega, Instructor

<http://www.cs.duke.edu/csed/alice09/>

Lessons and tutorials

Repository for Alice Materials

Summer 2009/2010/2011



Note about downloading Alice worlds

Most likely your computer does not know what an Alice world file is, with extension .a2w. If the Alice world you download is called story.a2w, your computer may think it is a .zip file and rename it to story.zip or story.a2w.zip. DO NOT unpack it or extract files, but instead rename it

back to story.a2w.

If you can't figure out how to rename it, you don't have to. Instead when you are loading the file into Alice, you can load it in as a .zip file if you select the option to load "ALL FILES", and not just ".a2w files".

Usage of materials

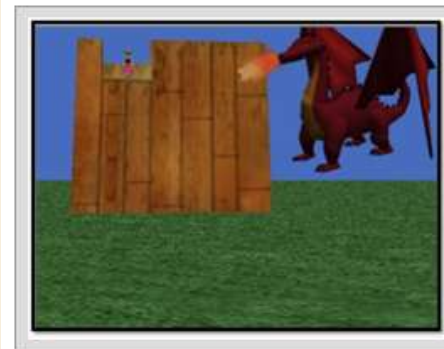
These materials are available for free for educational use. You may copy or adapt materials for educational use with students, or for training teachers. You may not use this work for commercial purposes.



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Alice Tutorials

These tutorials were developed from Alice workshops held in summers 2008, 2009 and 2010. We are still adding tutorials in 2010. The tutorials are organized by topics. There are two groups, the first is called "getting started" and the second is "more tutorials".



Name: Princess a
Level: Beginner
Time: 45 Minutes

Description: This you how to add ob methods, camera many other things

Finished Worlds

Part 1: Scene Set up and Starting Animation

Links: [.ppt](#), [Slides \(.pdf\)](#), [2-Handout](#), [4-Handout](#)

Part 2: Writing Methods and Events

Links: [.ppt](#), [Slides \(.pdf\)](#), [2-Handout](#), [4-Handout](#)

Part 3: Camera Control, Invisibility and 3-D Text

Links: [.ppt](#), [Slides \(.pdf\)](#), [2-Handout](#), [4-Handout](#)

Part 4: Sounds, Billboards, 3D Text, AsSeenBy

Downloads: [creature roar2.wav](#), [forest-1.jpg](#), [s](#)

Links: [.ppt](#), [Slides \(.pdf\)](#), [2-Handout](#), [4-Handout](#)